

WHAT IS CLAIMED IS:

1. A method of printing an image with a printer having magnetic ink character recognition (MICR) toning capability, the method comprising the steps of:

5        converting the image into a digital bitmap comprised of an array of pixels wherein each pixel is assigned a digital value representing marking information;

      defining each pixel as either a background pixel, interior pixel, or an edge pixel;  
and,

      reassigning the digital value of one or more edge pixels or interior pixels  
10    independently, thereby altering the concentration of magnetizable substances within the image when printed in order to improve the readability of printed characters by reading instrumentation.

2. A method in accordance with claim 1, wherein the converting step comprises  
15    converting the image to a binary digital bitmap and the reassigning step comprises reassigning the binary digital values to multi-bit digital values.

3. A method in accordance with claim 1, wherein the converting step comprises  
      converting the image to a multi-bit digital bitmap and the reassigning step comprises  
20    reassigning the binary digital values to multi-bit digital values.

4. A method in accordance with claim 1, wherein the reassigning step comprises increasing the value of edge pixels with respect to interior pixels.

5. A method in accordance with claim 1, wherein the reassigning step comprises decreasing the value of edge pixels with respect to interior pixels.

5           6. A method in accordance with claim 1, further comprising performing the defining and reassigning steps two or more times.

7. A method in accordance with claim 1, wherein the reassigning step comprises reassigning multiple interior pixel values.

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8. A method of printing an image with a printer having magnetic ink character recognition (MICR) toning capability, comprising the steps of:       /

converting the image into a digital bitmap comprised of an array of pixels wherein each pixel is assigned a digital value representing marking information;

15           defining each pixel as a background pixel, interior pixel, edge pixel, one line pixel, or two line pixel; and,

reassigning the digital value of one or more interior pixel, edge pixel, one line pixel, or two line pixels independently, thereby altering the concentration of magnetizable substances within the image when printed in order to improve the  
20   readability of printed characters by reading instrumentation.

9. A method in accordance with claim 8, wherein the converting step comprises converting the image to a binary digital bitmap and the reassigning step comprises reassigning the binary digital values to multi-bit digital values.

5           10. A method in accordance with claim 8, wherein the converting step comprises converting the image to a multi-bit digital bitmap and the reassigning step comprises reassigning the binary digital values to multi-bit digital values.

10           11. A method in accordance with claim 8, wherein the reassigning step comprises increasing the value of edge pixels with respect to interior pixels.

12. A method in accordance with claim 8, wherein the reassigning step comprises decreasing the value of edge pixels with respect to interior pixels.

15           13. A method in accordance with claim 8, further comprising performing the defining and reassigning steps two or more times.

14. A method of printing an image with a printer having magnetic ink character recognition (MICR) toning capability, comprising the steps of:

20           identifying the printer print nonuniformities;

converting the image into a digital bitmap comprised of an array of pixels wherein each pixel is assigned a digital value representing marking information;

defining each pixel as either a background pixel, interior pixel, or an edge pixel;  
and,

reassigning the digital value of one or more edge pixels or interior pixels  
independently, thereby altering the concentration of magnetizable substances within the  
5 image when printed in order to improve the readability of printed characters by reading  
instrumentation.

15. A method in accordance with claim 14, wherein the reassigning step  
comprises reassigning multiple interior pixel values.

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16. An apparatus for altering an image to be printed on a printer having magnetic  
ink character recognition (MICR) toning capability, the printer utilizing input digital  
image data comprised of an array of pixels and wherein each pixel is assigned a digital  
value representing marking information, the apparatus comprising a rendering circuit for  
15 defining each pixel as either a background pixel, interior pixel, or an edge pixel; and  
reassigning the digital value of one or more of the edge pixels or interior pixels  
independently in order to alter the concentration of magnetizable substances within the  
image when printed in order to improve the readability of printed characters by reading  
instrumentation.

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17. An apparatus in accordance with claim 16, wherein the digital image data is  
binary.

18. An apparatus in accordance with claim 16, wherein the digital image data is a  
25 multi-bit.

19. An apparatus in accordance with claim 16, wherein reassigning comprises increasing the value of edge pixels with respect to interior pixels.

5           20. An apparatus in accordance with claim 16, wherein reassigning step comprises decreasing the value of edge pixels with respect to interior pixels.

21. An apparatus in accordance with claim 16, wherein the rendering circuit further comprises performing the defining and reassigning steps two or more times.

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22. An apparatus in accordance with claim 16, wherein reassigning comprises reassigning multiple interior pixel values.

23. An apparatus for altering an image to be printed on a printer having magnetic  
15 ink character recognition (MICR) toning capability comprising:

a raster image processor for converting the image into a digital bitmap comprised of an array of pixels wherein each pixel is assigned a digital value representing marking information;

20 a rendering circuit for defining each pixel as either a background pixel, interior pixel, or an edge pixel; and, reassigning the digital value of one or more edge pixels or interior pixels independently in order to alter the concentration of magnetizable substances within the image when printed in order to improve the readability of printed characters by reading instrumentation.

24. An apparatus in accordance with claim 23, wherein converting comprises converting the image to a binary digital bitmap and the reassigning step comprises reassigning the binary digital values to multi-bit digital values.

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25. An apparatus in accordance with claim 23, wherein converting comprises converting the image to a multi-bit digital bitmap and reassigning comprises reassigning the binary digital values to multi-bit digital values.

10 26. An apparatus in accordance with claim 23, wherein reassigning comprises increasing the value of edge pixels with respect to interior pixels.

27. An apparatus in accordance with claim 23, wherein reassigning comprises decreasing the value of edge pixels with respect to interior pixels.

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28. An apparatus in accordance with claim 23, wherein the rendering circuit performs performing the defining and reassigning two or more times.

20 29. An apparatus in accordance with claim 23, wherein reassigning comprises reassigning multiple interior pixel values.

30. A method in accordance with claim 1, further comprising classifying edge pixels by direction and reassigning the digital value of the edge pixels as a function of direction.

5           31. A method in accordance with claim 8, further comprising classifying edge pixels by direction and reassigning the digital value of the edge pixels as a function of direction.

10           32. A method in accordance with claim 14, further comprising classifying edge pixels by direction and reassigning the digital value of the edge pixels as a function of direction.

15           33. An apparatus in accordance with claim 16, further comprising classifying edge pixels by direction and reassigning the digital value of the edge pixels as a function of direction.

20           34. An apparatus in accordance with claim 23, further comprising classifying edge pixels by direction and reassigning the digital value of the edge pixels as a function of direction.

35. A method of printing an image with a printer having magnetic ink character recognition (MICR) toning capability, the method comprising the steps of:

converting the image into a digital bitmap comprised of an array of pixels wherein each pixel is assigned a digital value representing marking information;

defining each pixel as either a background pixel, interior pixel, or an edge pixel;  
classifying edge pixels by direction; and,

reassigning the digital value of one or more edge pixels as a function of direction,  
thereby altering the concentration of magnetizable substances within the image when  
5 printed in order to improve the readability of printed characters by reading  
instrumentation.

36. A method in accordance with claim 35, wherein the converting step  
comprises converting the image to a binary digital bitmap and the reassigning step  
10 comprises reassigning the binary digital values to multi-bit digital values.

37. A method in accordance with claim 35, wherein the converting step  
comprises converting the image to a multi-bit digital bitmap and the reassigning step  
comprises reassigning the binary digital values to multi-bit digital values.

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38. A method in accordance with claim 35, wherein the reassigning step  
comprises increasing the value of edge pixels with respect to interior pixels.

39. A method in accordance with claim 35, wherein the reassigning step  
20 comprises decreasing the value of edge pixels with respect to interior pixels.

40. A method in accordance with claim 35, further comprising performing the  
defining and reassigning steps two or more times.



41. A method in accordance with claim 35, wherein the reassigning step comprises reassigning multiple interior pixel values.